REMARKS

Claims 87-124 are pending in the present application.

In the office action mailed March 19, 2007 (the "Office Action"), the Examiner rejected claims 87, 94, 95, 102, 103, 108, 110-113, 120, 121, and 124 under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,669,388 to Vilkomerson (the "Vilkomerson patent") in view of U.S. Patent No. 5,724,973 to Spratt (the "Spratt patent"). Claims 88, 89, 96, 97, 104, 105, 114, and 115 were rejected under 35 U.S.C. 103(a) as being unpatentable over Vilkomerson in view of Spratt, and further in view of U.S. Patent Nos. 6,296,611 to Schiller and 6,471,650 to Powers et al. Claims 90, 91, 98, 99, 106, 107, 116, and 117 were rejected under 35 U.S.C. 103(a) as being unpatentable over Vilkomerson in view of Spratt, and further in view of the Schiller patent and further in power U.S. Patent No. 6,537,220 to Friemel et al. Claims 92, 93, 100, 101, 109, 118, 119, 122, and 123 were rejected under 35 U.S.C. 103(a) as being unpatentable over Vilkomerson in view of Spratt, and further in view of U.S. Patent No. 5,398,216 to Hall et al.

The Vilkomerson patent describes an ultrasound system for locating a blood vessel by scanning a plurality of transducers to determine the location of the blood vessel associated with the strongest signal and for measuring the rate of blood flow through the located blood vessel. Various embodiments are described, including a "sequential scanning" embodiment (see col. 3, line 44-col. 4, line 39 and Figure 4), an embodiment that uses a "sequential halving routine" (see col. 4, line 40-col. 5, line 18 and Figure 5), and an embodiment that uses a "hybrid routine" (see col. 5, lines 19-54 and Figure 6). As described in Vilkomerson, the sequential halving routine and the hybrid routine can be used where the sequential scanning routine cannot be completed fast enough. See col. 4, lines 24-44. The measurement time must be short enough to complete scanning through all of the transducers during the time blood flow can be considered constant. Otherwise, the sequential scanning procedure may not be reliable. See col. 4, lines 19-28.

The Spratt patent has been cited as teaching using a host processor computer to effect a Doppler measurement system. See the Office Action at page 2.

Claims 87, 95, 103, 112, and 121 are patentable over the Vilkomerson patent in view of the Spratt patent because the combined teachings of the Vilkomerson and Spratt patents fail to teach or suggest the combination of elements recited by the claims.

For example, with respect to claims 87 and 95, the Vilkomerson and Spratt patents fail to teach or suggest a Doppler ultrasound system having, among other things, a computer configured to analyze processed data representing reflected signal power of blood flow for different sets of elements to determine a window through which blood flow is detected. The Vilkomerson patent describes an ultrasound system that relies on comparing the strength of velocity signals, and not on the strength of power signals. This fact is made clear by the deficiencies of the sequential scanning procedure described in the Vilkomerson patent. More particularly, scanning must be completed during the time that blood flow is considered constant, otherwise the procedure may not be reliable. See col. 4, lines 20-39. As known, blood has similar reflectivity to ultrasound whether it is moving fast or slow. Thus, Vilkomerson system could not be relying on reflected signal power as a measure since changing rate of blood flow is specifically described as a problem for the proposed system.

In contrast to the Vilkomerson system, claims 87 and 95 recite that reflected signal power is used for determining a window through which blood flow is detected. The shortcomings of the Vilkomerson system are overcome by the use of reflected signal power instead of the strength of velocity signals. With an embodiment of the present invention, blood flow can be analyzed for a blood vessel as deep as five centimeters, compared to the 1 centimeter example described in the Vilkomerson patent.

The Spratt patent, even if we assume for the sake of argument that the Examiner's characterization of its teaching is accurate, fails to make up for the deficiencies of the Vilkomerson patent previously described.

Claims 103, 112, and 121 have been amended to recite limitations related to the use of reflected signal power, as previously discussed with respect to claims 87 and 95. For the foregoing reasons, claims 87, 95, 103, 112, and 121 are patentable over the Vilkomerson patent in view of the Spratt patent. Therefore, the rejection of these claims under 35 U.S.C. 103(a) should be withdrawn.

Remaining claims 88-94, 96-102, 113-120, and 122-124 are dependent from a respective allowable base claims, and consequently, are also patentable over the cited references, alone or in combination. Therefore, the rejection of these claims under 35 U.S.C. 103(a) should be withdrawn.

All of the claims pending in the present application are in condition for allowance. Favorable consideration and a timely Notice of Allowance are earnestly solicited.

Respectfully submitted,

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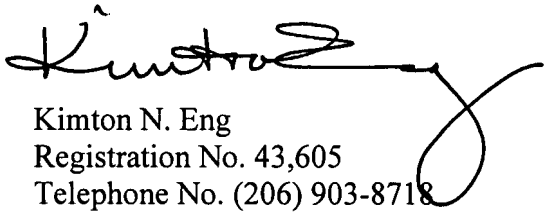

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